moſt all kinds of *Purples*, and many ſorts of *Greens*, both theſe colours conſiſting of mixt colours; for if we ſuppoſe A and A in the ninth Figure, to repreſent two pulſes of clear light, which follow each other at a convenient diſtance, A A, each of which has a *ſpurious* pulſe preceding it, as B B, which makes a *Blue*, and another following it, as C C, which makes a *Red*, the one caus'd by tinging particles that have a greater refraction, the other by others that have a leſs refracting quality then the liquor or *Menſtruum* in which theſe are diſſolv'd, whatſoever liquor does ſo alter the refraction of the one, without altering that of the other part of the ting'd liquor, muſt needs very much alter the colour of the liquor; for if the refraction of the *diſſolvent* be increas'd, and the refraction of the tinging particles not altered, then will the preceding *ſpurious* pulſe be ſhortned or ſtopt, and not out-run the clear pulſe ſo much; ſo that B B will become E E, and the *Blue* be *diluted*, whereas the other *ſpurious* pulſe which follows will be made to lagg much more, and be further behind A A than before, and C C will become *f f*, and ſo the *Yellow* or *Red* will be heightned.

A *Saline* liquor therefore, mixt with another ting'd liquor, may alter the colour of it ſeveral ways, either by altering the refraction of the liquor in which the colour ſwims: or ſecondly by varying the refraction of the coloured particles, by uniting more intimately either with ſome particular *corpuſcles* of the tinging body, or with all of them, according as it has a *congruity* to ſome more eſpecially, or to all alike: or thirdly, by uniting and interweaving it ſelf with ſome other body that is already joyn'd with the tinging particles, with which ſubſtance it may have a *congruity*, though it have very little with the particles themſelves: or fourthly, it may alter the colour of a ting'd liquor by diſ-joyning certain particles which were before united with the tinging particles, which though they were ſomewhat *congruous* to theſe particles, have yet a greater *congruity* with the newly *infus'd Saline menſtruum*. It may likewiſe alter the colour by further diſſolving the tinging ſubſtance into ſmaller and ſmaller *particles*, and ſo *diluting* the colour; or by uniting ſeveral *particles* together as in precipitations, and ſo deepning it, and ſome ſuch other ways, which many experiments and compariſons of differing trials together, might eaſily inform one of.

From theſe Principles applied, may be made out all the varieties of colours obſervable, either in liquors, or any other ting'd bodies, with great eaſe, and I hope intelligible enough, there being nothing in the *notion* of colour, or in the ſuppos'd production, but is very conceivable, and may be poſſible.

The greateſt difficulty that I find againſt this *Hypotheſis*, is, that there ſeem to be more diſtinct colours then two, that is, then Yellow and Blue. This Objection is grounded on this reaſon, that there are ſeveral Reds, which *diluted*, make not a Saffron or pale Yellow, and therefore Red, or Scarlet ſeems to be a third colour diſtinct from a deep degree of Yellow.

To which I anſwer, that Saffron affords us a deep Scarlet tincture, which may be *diluted* into as pale a Yellow as any, either by making a weak ſolution

lution of the Saffron, by infuſing a ſmall parcel of it
of liquor, as in ſpirit of Wine, or elſe by looking
quantity of the tincture, and which may be height
Scarlet, by looking through a very thick body of thi
a thinner parcel of it, which is highly *impregnated* w
by having had a greater quantity of the Saffron diſſ
cel of the liquor.

Now, though there may be ſome particles of oth
give a lovely Scarlet alſo, which though *diluted* neve
or looked on through never ſo thin a parcel of ting
afford a pale Yellow, but onely a kind of faint Re
ment but that thoſe ting'd particles may have in them
Yellow, though we may be unable to make them exh
of being *diluted* depending upon the diviſibility of
am unable to make the tinging particles ſo thin as to
it does not therefore follow, that the thing is impoſſi
the tinging particles of ſome bodies are of ſuch a na
be found ſome way of comminuting them into leſs
does diſſolve them into, all the Rays that paſs thro
ſarily receive a tincture ſo deep, as their appropriate
compar'd with the proprieties of the diſſolving li
diſpoſe them to empreſs, which may perhaps be a
or pale Red.

And that this is not *gratis dictum*, I ſhall add one
wherein the thing is moſt manifeſt.

If you take Blue *Smalt*, you ſhall find, that to affo
which *cæteris paribus* has the greateſt particles or ſa
ther divide, or grind thoſe particles on a Grindſto
you may by *comminuting* the ſands of it, *dilute* the B
as you pleaſe, which you cannot do by laying the col
ſoever any ſingle particle is, it exhibits as deep a Bl
Now, there are other Blues, which though never ſ
not be *diluted* by grinding, becauſe conſiſting of ver
ry deeply ting'd, they cannot by grinding be actually
ler particles then the operation of the fire, or ſome
ſtruum, has reduc'd them to already.

Thus all kind of *Metalline* colours, whether *precip*
cin'd, or otherwiſe prepar'd, are hardly chang'd b
marine is not more *diluted*; nor is *Vermilion* or *Red-*
faint colour by grinding; for the ſmalleſt particles
view'd with my greateſt Magnifying-Glaſs, if they be
pear very deeply ting'd with their peculiar colours
magnified and enlightned the particles exceedingly,
them, perceive them to be tranſparent, or to be who
ſmalleſt ſpecks that I could find among well ground
lead, ſeem'd to be a Red maſs, compounded of a multi
motes, which ſticking together, compos'd a bulk, not
ſandth part of the ſmalleſt viſible ſand or mote.

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